NO. 1.

W. C. ROBINSON & CO. The Leading Jewelers, BIG STONE BIG STONE POST.

BIG STONE GAP, VA., FRIDAY, AUGUST 15, 1890.

VOL. I.

THE S. A. & O. ROW,

ew Complications and Proceed-ings Against Bates, Haskell, Gordon and Others for

(Special Dispatch.)

sued a rule against H. W. Bates, Geo. A. Blakemore, Robert Cox, W. A. Rader, F. any they can, why they shall not be attach- gathered the following items: ed and fined and imprisoned for contempt of court, in refusing to obey its orders.

have not been found.

The complainants have also given notice to the defendants that they will, on the same date, move to dissolve the injunction granted in the case by Hon. J. A

The service of the summons created considerable excitement here and there are many different opinions as to the legal merits of the case and of its final out

DISSATISFIED IN KENTUCKY.

The Methods adopted by Democratic Committees Causing Deep Disgust and Strengthening the Farmers Alliance.

(Special Dispatch.)

LOTISVILLE, Aug. 14.—Considerable dissatisfaction has been caused in several sections of the state by the despotic and corrupt action of many of the local democratic committes in securing the nomina- | contract time. tions of several unpopular and incompetent men for the different offices, and in whipping in voters to support them in spite of the protests of the better element to instance, the local committee nominated English for the Constitutional Convention before the legislature had passed the act authorizing such a convention. Their action caused considerable dissatisfaction, and the committee was again called together by the chairman. But so great was the disgust among the committee themselves that only half of them attended the take the place of one who had resigned because of his disgust of the proceedings, and proceeded to renominate English, who was elected over ludge Pulling and proceeded to renominate English, who was elected over Judge Bullitt, though he was in no respect fitted for the position, and Judge Bullitt was eminently qualified party machinery.

has served to give the movement strengthen the confidence of Georgia and Alabama.

Cardinal Newman's Death.

VASHINGTON, Aug. 14 .- It is understood

ral republican Congressmen have in the Western States, and they t there is no demand for the passage else! such a measure, but much opposition to

Killing Frosts.

Joneson City, Aug. 14 .- Severe frosts

ckett's Monument.

14.-The corner stone of

BIG STONE GAP, VA.

What has been done toward Laying the Foundation for the Future Mineral Metropolis of the Nation.

BRISTOL, Aug. 14.—Judge Bolen has is- INTERESTING RESUME OF THE WORK.

Blakemore, Robert Cox, W. A. Rader, F. readers of the Post, not only at a distance, seams every 1500 feet. The main vein, of them large and elegant. There are were taken directly from the books and but also to many at home, to know as the "Imboden vein," has been several fine blocks of business house surply treated through the great of the different establishments. Huidekoper, J. C. Haskell, F. C. Dart, G. but also to many at home, to know the successfully traced through the greater der discussion, some of which are at the and their accuracy cannot, therefore, be used at the successfully traced through the greater der discussion, some of which are at the and their accuracy cannot, therefore, be w. Hammitt, A. O. whitaker, w. J. Cox provements. With a view to giving the an average thickness of about seven feet, and substantial brick and stone for questioned. and A. M. C. Sumpter to appear before him to-morrow at Abingdon, to show cause. If having charge of these various works, and the remarkably free from slate and other impulsites, and of a quality for coking section search to any coal on the continent. Mr. Taggart, who has for many years been three hundred tenement cottages.

THE ELECTRIC LIGHTS.

Haskell, Huidekoper and Sumpter, who stands on the island between plats 3 and 4, in which is as complete an outfit of horse-power. The are light machine has a capacity of 50 lights and the incandescent machine a capacity of 650 lights. There is already up about 20 miles of wire, and 200 incendescent lights have been put into buildings. For the present, the city is to have 41 are lights, distributed as follows: On plat 1, including the space up to Hotel Del Monte and the Imboden reservation, 22 lights; on plat 3, 7 lights; on plat 5, 12 lights. The Thompson-Houston company has the contract, and their agents, Messrs. Cooley, of Cincinnati, and King, of Winchester, Ky., have been very efficient in pushing the work.

THE WATER-WORKS.

The Glamorgan Iron company, of Lynchwater-works, have made their surveys, and

dummy engines and two passenger coaches tual survey and estimates, bring the are at the depot. For freight traffic the until the regular freight cars of the line scheme will be carried out, and that withmeeting. As filey lacked one of a quorum, orders to begin work on the belt rood as are built

POPLAR HILL HOTEL.

Work has not begun on this much deor concrete hotel, after the plan accepted tate, and causing the politicians much formula apprehension, succeeded in electing to make the company of a heavy drain practicable the dummy line will be expensely all coke fuel.

It is not necessary to present further tended to it, and also beautiful drive-ways for the week. \$12,161,000, and since January 1, \$325,563,000, as compared with give enable one to trace with ease the give enable one to trace with ease the their give enable one to trace with ease the trace with ease the their give enable one to trace with ease the their give enable one to trace with ease the their give enable one to trace with ease the their give enable one to trace with ease the their give enable one to trace with ease the trace with the give enable one to trace with ease the trace with the give e ion. This organization has suddenly public will be equally benefited by the cloped unexpected strength, and is exng its membership so rapidly as to be hoped that this plan, or some other caten serious results to the regular feasible plan, will be adopted speedily, ocratic organization. The dissatisfac- and the work pushed forward. Nothing peratic committees in various counshow that they mean business, or better soon sweep the state, as it has done the assurance of this great enterprise.

Messrs. Byrd and Peters, the managers ent Roman Catholic prelate, have training are intimately acquainted with ly from Cumberland Gap, and those in other eminent persons, was present, the all the iron-making states of the New. He spurs in all directions to the coal and two having been close personal friends for has been connected with the building or bines in the highest degree all the essential elements entering into the cheapest production of iron and steel, and here he tariff bill will come to a final vote has pitched the crowning work of his us where it makes a juncture with the in each industry per day, week, month or 30. Protests continue to pour in life-two splendid furences with the comset the force bill and it is not likly bined capacity of 1400 tons of pig iron the modified measure of the Senate per week. Mr. Byrd confidently claims in '91. be passed at the present session, if at that he can make from the coke and the ores, which lie here in two miles of each other, a pig two dollars per ton cheaper returned from a visit to their and three dollars per ton better than can be made at Birmingham, or anywhere

It is no wonder then that he and his furnaces to completion as rapidly as pos-Mr. Byrd is superintending the sible reported to have occurred Tuesday foundations is going forward satisfactowork here, and the heavy masonry on the Wednesday nights all through the rity. Tramways connect the foundations rains of North Carolina. The leaves with stone quarries near by The furnace sites adjoin the S. A. & O. R. R. and this The mercury was down to 30 road and the L. & N. will run switches into the yards.

Mr. Peters, aided by Capt. Jenkins, late of the S. A. & O., is at East St. Louis, Ill., superintending the dismantling of ett monument will be laid the two furnaces, and their shipment here. rong's Springs. Cel. Rob- It will be remembered these furnaces grandson of the famous were built there two years ago and were seent. A large crowd of not used at all, to speak of, owing to the giving out of the ores at Iron Mt., and other adverse circumstances. These gen-

best coal lands. Mr. Taggart, assisted by be built at once. Capt. Henry Webb, late city engineer of Several church buildings are being put this city, has fer two months past, had a into shape for contracts, some very handlarge corps of engineers and miners at some ones are spoken of and will no doubt obligations to those manufacturers, who work making traces of the coal beds on materialize. The City Hall is being agi-callahan and Preachers Creeks and tribu-ted. Contracts have been, or are being. tary streams, and making openings in the let for a great number of residences, many the figures that are embodied in the report struct ovens. In short, all the elements | mighty and commercial city. conbine for the successful manufacturing engine and boiler has a capacity of 100 of the cheapest coke and of the finest

shortly be operating a trial oven.

THE INTERSTATE TUNNEL.

This great scheme with the incalculable | cidence burg, who have the contract to erect the Capt. W. F. Gordon, the chief engineer, ings of from the upper end of plat 5, through the estimate includes the double-track tunavenue to West 5th and the river. Two point to the western terminus. If his ac-

This rather aesthetic, but highly imporwas in no respect fitted for the position, and Judge Bullitt was eminently qualified to fill it. Public sentiment now loudly demands a reorganization of the party upon a purer basis, and Gen. Castleman, chairman of the State Central Committee, is taking steps to secure a reform of the peaks and depressions, with a view to inarty machinery.

It has been ascertained that the armers Alliance, which is growing in the last annual meets and causing the politicians much by the company at their last annual meets ling, and it is thought the negotiations will be successful. This will relieve the last annual meets and causing the politicians much by the company at their last annual meets ling, and it is thought the negotiations serve and building upon "The Knob" a for the week were \$5.843,700; total since rustic hotel or club house. As soon as January 1, \$198,645,000, against \$202,565,

Work all along the lines is progressing satisfactorially. The S. A. & O. has settled into a very creditable road, with two at the methods adopted by the local in the power of the company can better passenger trains each way per day, and sufficient freight train accommodations. A suitable freight depot has been erected. pularity and strength. Many believe it holders, and the public generally, than A passenger depot is badly needed. This road has pushed through the Gap, and is about completed up into the coal fields on

Loony Creek. the death of Cardinal Newman, the business push, and from long Track-laying is advancing this way rapidprogressing for the past two days all the principles and details of the iron business. Mr. E. J. Byrd, one of the leaders in this important movement, are track-laying on from here out into the carliest possible date, and whenever coal fields through the Gap, and on to changes should make it essential, the cost st popular dignitary in the Catholic tending through nearly forty years, and tending through nearly forty years, and in several countries of the Old World and ready being graded. They will run out as eminent resume the countries of the Old World and ready being graded. They will run out in several countries of the Old World and ready being graded. mines. Grading is now being pushed on the time dutiable in this country. The management of many very important the switch yards, turn-tables, etc., on the Sa dinal Newman was a learned eccle- iron and steel plant in this country. With land known as the Southwest Virginia astic, free from sectarian bitterness and haticism, and his death is deeply upped by all classes.

If on and steel plant in this country, with all this practical knowledge and experience behind him, he has settled on Big Stone Gap as the one place which com- is said this company will build a very upon definitely specified units of produchandsome depot.

The N. & W. road is pushing its work westward to Norton, twelve miles above L. & N., with all possible dispatch. It is year, the profits of manufacturers, etc.

The E. T. V. & G. extension is being graded north from Rogersville, Tenn., and the Kentucky Union is completed to Jackson, and only awaiting the settling of the tunnel question to begin pushing on here. this way, and it is almost the decree of partner, Mr. Peters, are pushing their nature that they must come to Big Stone Gap for an eastern outlet, or eastern and south-eastern connections.

OTHER INTERNAL IMPROVEMENTS.

lectively as represented in the city council, are awakening to the importance of all kinds, chiefly of publicon, the urgent demand for information talk, but there is everywhere among our citizens an impulse to build, and improve.

levying and collecting the taxes for this

this company, and that they own here some fifty or sixty thousand acres of the over Powell's River at E. 5th street, is to

manager of some of the leading coke plants at Connellsville, is greatly delight- and hearty tone among our citizens. The ed with the outlook here. He reports this spirit of improvement is in the air, and be-

Financial.

General trade has been somewhat re-Both the L. & N. and the S. A. & O. are stricted by extreme heat and much solicipreparing to run spur tracks up the tude has been excited respecting the crops. streams named, and Mr. Taggert will then | Chicago advices intimate that it is likely build at once 300 or more ovens, to be the drought and hot weather may curtail followed in the future by an indefinite the consumption of goods in sections where number. He is now building and will the damage is most serious, but up to the latest dates very few orders had been can-It is on the foundation of coal and iron celled. In New York, among dry goods that the destiny of Big Stone Gap rests, and with such showings as Messrs. Taggert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in their respective interior than for several years at this seagert and Byrd make in the final report. To analyze the array of figures would require the compass of a gradual than the final report.

The first and the final report is a minimal than the final report. To analyze the array of figures would require the compass of a gradual than the final report.

The first and f departments, who can doubt the future? son. The prices of commodities, tea excepted, are not perceptibly affected by silver legislation. Although it is a coinquite noticeable that a feverish benefits it will bring to Big Stone Gap speculation in produce, with wide fluctua-seems to be materializing in good shape. Itions in prices, has characterized the dealthe week-bar silver rising has secured Capt. Bishop, of Petersburg, an and gold leaving the country. As to the on the mountain side, six miles up the south fork of Powell's river, to the town. A portion of their mains is on the ground now, and the balance is being cast at the A portion of their mains is on the ground proposed line with a spiendid corps of as wheat is a shade lower, with considerable now, and the balance is being east at the foundry. They will begin very shortly to put down the pipes, and will doubtless miles from the town. Capt. Bishop has complete the system by November I, the of the proposed routes, and is confident leum exchanges and the New York Conthat a line can be secured, with a maxi-solidated Exchange agreed to list the that a line can be secured, with a maximum grade of only 66 feet to the mile, up

Ohio Pipe Line certificates. A Chicago
ton, run of furnace, North and South, and Track laying began on the dummy line to and through Big iBlack Mountain, special says: The new bill of lading adon the 12th instant. Capt. Thos. Walker down upon the Poor Fork of the Cumber- opted by the Central Traffic Association. and his corps are pushing the work in land, and up the same, to and through and containing the words "not negotiagreat form. Three miles of steel rails are Pine Mountain and out into a section in ble," was thrown out by the Commercia in the community. In Jefferson county now in the S. A.& O. yards, and the cross- Letcher county, Ky., where good diverg- National Bank on Saturday. Shippers are ties are rapidly being put in place. Two ing lines in all directions can be secured, using roads which have not adopted it. miles of the track will be laid at once, all for two million dollars, or less. This The Interstate Commission sent out its expected order reducing rates on grain Imboden reservation, and down Wood nels, and double-track lines from this and breadstuffs west of the Mississippi

Gold exports equal to \$6,500,000 during amount to approximate two million dol- the week and the uncertainties caused by flat cars of the S. A. & O. will be used lars, there seems every assurance that the silver speculation disturbed the money market to an unusual degree, so that Capt. Walker is expecting out delay. Capt. Bishop expects to be banking institutions are keeping their out for four or more months with his funds well in hand, loaning very little except on call. Time money, in consequence is firmer, despite large disbursements by the Treasury. Other disbursements, or account of interest and dividends onvable August 1, reached the unprecedented total paper is quoted at 5 @ 512 %, and prime single name at 51, @ 6 %

COST OF MAKING PIG IRON.

OVERWHELMING ARGUMENTS IN SEP-PORT OF THE SOUTH AS A REGION FOR MAKING CHEAP IRON SET FORTH IN COMMISSIONER WRIGHT'S REPORT.

(From the Manufacturers' Record.) When the Department of Labor was established by Act of Congress in 1888 of producing in the United States and leading countries of the world articles at scope of the investigations thus provided for was very broad, the commissioner of It labor being instructed to base his inquiries tion, and to show in his results the different elements of cost, including the wages paid thought they will reach Norton early Immediately upon assuming the position of commissioner of labor, Hon. Carroll D. Wright formulated his plans for this elaborate work of investigation, and the agents and experts of his office have been at work since December, 1888, gathering the re-Several other Kentucky roads are heading quired material. In undertaking this work this way and it is almost the degree of Mr. Wright selected as a basis the more important industries, upon which the minor

industries largely depend. The industries which Mr. Wright chose for this purpose were iron and steel, cotton and wool, glass, linen, silk and earthenware. A vast amount The citizens, both individually and col- of material has been gathered by the delic and private buildings, grading, paving upon subjects now under discussion in the and macadamizing streets, etc. The air consideration of tariff legislation, has neis no longer pregnant with speculative cessitated the issuance of a preliminary report by Mr. Wright upon the cost of producing pig iron, steel ingots, steel rails. The council has taken steps toward coal, coke, iron ore and limestone.

Reports from the engineers who have arted on the marveying enterprise are about eight months or less time.

The core plant is source, all of which will be expended upon the streets in various about eight months or less time.

The core plant is intelligent grasp of the subjects about eight months or less time.

The core plant is one of great difficulty, as it is anything as the tunnel need not the manager, Mr. J. K. Taggart, and an are consideration. Naturally the work is one of great difficulty, as it is anything or cost per to open his books to a government of cost that great core, the prelimitation of Cennellsville, have begun the desired and materials and in the cost of his labor and materials and in an endeavor to make an exhaustice.

Congress is marked by its general accersate in the subjects of house its intelligent grasp of

In his treatment of the cost of making pig iron, Mr. Wright has selected for his preliminary report the figures of 115 dir-ferent establishments, each of which is designated by a number. There is scareely save the names of different establishdesignated by a number. There is scarcely save the names of different establishments. Let us first take the cheapest cerns, and there is no indication of their iron made in the South, and examine the location beyond a broad grouping of the works in two grand divisions-Northern conditions under which it was produced. The furnace designed as No. 5 shows the of court, in refusing to obey its orders.

The electric light works are about completed and light will be furnished in a few mons upon all the parties, except Gordon, and an abundance of level lands at hand mons upon all the parties, except Gordon, and an abundance of level lands at hand on the parties, except Gordon, and an abundance of level lands at hand on the valley of surpassing beauty, abundant by railroads, this valley of surpassing beauty, abundant by railroads and southern. The distribution of the location beyond a broad grouping of the works in two grand divisions—Northern drainage, easily accessible by railroads, this valley of surpassing beauty, abundant evidences that the restless and resistless and resistless is as follows: Northern on the water courses on which to conon the water courses on which to con- tide has set in which is to make here a district-Illinois, 3; Indiana, 1; Maryland, district—Illinois, 3: Indiana, 1: Maryland, dently one of the finely equipped modern 1: Michigan, 2: Missouri, 1: New York, stacks in the Alabama district. It is a 3: Ohio, 19: Pennsylvania, 35: West Virsingle stack 75 feet high by 17 feet bosh, ginia, 4; Wisconsin, 1. Southern district-Alabama, 13; Georgia, 1; Tennessee, 6; The period of operation upon which the Virginia, 6. The foreign establishments

Great Britain, 8. The information that is given by Mr. Wright is presented without comment or analysis. It is simply submitted in bulk, and it is left for the reader to digest it for himself or the analysis are in the formation of the furnace from coal mined by most of the furnace from coal mined within the limits of this article is to draw from the figures a few details that bear most directly upon the iron industry of the South. After all the discussion and argu- tant from the furnace and their average ment that has hinged upon the cost of cost laid down at the furnace was \$0.841 making iron in the South, and after the often harsh criticism that has been called cents per ton. In fact, the ore seems to forth by figures presented to show how have cost but a trifle more than the limeconfirmation of some of the "Southern pig recapitulation of all the elements of cost iron fables." The figures not only show the in the production of iron by this furnace measure of the advantage that the South gives the following result: enjoys, but they also reveal in very specific terms the exact character of that ad-

for this the "deadly parallel column" will

erve:			
GGREGATE	OF ALL COS	TS PER TON	ок 2240 г.в
No	rth.	S	outh.
No.	Cost.	No.	Cust.
1	\$13,207	1	8 9.634
2	12.820	2	10.267
3	13.236	3	11.741
4	14.611	4	
5		5	
6		6	
7		7	
	15,499	8	
9		9	
10		10	9.441
11	12.434	11	9.161
12	THE STATE OF	19	10.670
13	13.620	131	
14		14	
15		15	9.829
16	14.079	16	9.903
17	12.785	17.	10,160
18	13.569	18	12.071
19	14.016	19	10.025
20	13.672	20	12,403
21	. 12.997	21	
99	14.750	12-2	12.913
23	13,007	23	
24	14 858	94	11.509

Of these furnaces, Nos. 8, 9, 13, 14, 19 and 20 of the Northern group used mixed Lahor anthracite coal and coke; Nos. 2, 4 and 12 officials and clerks used bituminous coal and coke, while No. I ran on all bituminous coal. No. 16 of the Southern group used bituminous coal

14.201

		Cinder.	Limm-		
No.	Ore.	Scrap, etc.	stane.	Coke.	Total
1.	\$5,578	\$1.090	\$0,667	\$3.970	\$11.125
2	. 7.525		.265	3,357	11.147
3	6.671	1.003	*51	3.367	11.492
4	. 8.644	.199	.278	3.998	12.519
5		.480	.410	4.679	12,508
6	. 7.510		.431	3,320	11.261
7		1.410	.827	2.105	11,502
8	7.406	.331	.960	4.710	13.697
9	7.435	****	.652	4.915	13,002
10	6.355	1.282	.484	3,776	11.897
11	5.745	1.067	386	3.234	10.372
12.	7.492	1.499	.429	4.290	13.660
13.	4.265	1.559	.457	4.582	10.860
14	6.195	.614	.881	4.284	11.958
15.	6,808	****	.729	4.700	12.247
16.	6.314	1.371	1.214	2.425	11.354
17.	4.681	1.578	1.256	2.185	9.700
18	6.419	1.414	.964	1.986	10.783
10	5,899	.685	.857	4.229	11.650
20.	4.905	.573	1.225	4.436	11,1:19
21	6.36%	.798	.404	3.054	10.624
22	7.925	.593	.561	3.644	12.723
23	5.790	.163	.025	3.824	30.43
24.	8.769	****	.256	3.087	12.11:
25	6.250	.347	.336	4.975	11.91

- 5	OST OF M.	ATKRIALS PER	TON OF	PRODUCT, 8	OUTH.
		Cinder,	Lime-		
o.	Ore.	Scrap, etc.	stone	Coke.	Total.
13.	\$1,561	\$.007	\$.408	\$5.197	\$ 7.173
2			.477	4.580	7.200
	. 3.315		.724	5.491	9.34
	. 3.340		.365	4.600	8,305
	. 1.852		.789	3.572	6.013
	. 2.662	.101	.646	4.701	×.110
	. 2.587	.099	.397	4.471	7.554
00	. 3.021		.315	5.068	8,404
	. 4.211		.752	5.784	10.747
			.293	4.237	7,216
90	1.960		.324	4.243	6.527
	. 1.983	.010	.391	5.033	7,437
			.229	4.382	8,877
		.131	.560	4.991	9.395
399		10 10 2000	.714	3.256	7.925
			.235	4.157	8.340
		.134	.520	4.263	8.656
	4.151	1000	.493	4.931	9.575
		77.		3.878	8,855
	4.935		.810	4.021	3.766
939	3,417		.483	4.264	8.164
			.961	5.397	10,573
90	4.694		.704	3.016	8.414
	5.066		.758	3,996	9,810
	4,003	THE PROPERTY OF	.777	4.498	9.362

prominently by these two tables is the greater relative cheapness of the ores used by the Southern furnaces. The smallest cost per ton of iron for ore to Like all of the statistical handiwork of the Northern furnaces is seen to be \$4.265, levying and collecting the taxes for this year and it is estimated that some eight or ten thousand dollars will be derived from this source, all of which will be expended upon the streets in various be expended upon the streets in various.

oal lands. It will be remembered that the requirements of collecting this tax. It is probable that a considerable amount of macadarizing will be done.

The improvement Company's height wary materially between the North and number of manufacturers who were willing South, nor is there any marked difference to give the desired information to make in the allowances made for superinfenhis work at once successful and valuable, dence and clerical work in the two groups and although their identity is carefully under consideration, although those items corceale lethe country is under lasting are slightly larger in the case of the Northobligations to these manufacturers, who ern plants. The average payments for taxes are also very near alike, and the information for the public benefit. All of the figures that are embodied in the report were taken directly from the books and

There is much of both interest and

profit in a closer analysis and study of a few

of the more notable of the cases of lew

cost that are presented in the tables that have been given. Thanks to Mr. Wright's with four stoves and two blowing engines. figures of cost were calculated was a run Belgium, 6; France, 1; Germany, 4; of 365 days from January 1, 1889 to December 31, 1889. The aggregate output himself or else await the completion of one mile distant, the fuel costing at the

3.572 \$1.003 Officials and clerks Total of all cost per ton. After such a statement of extreme low

cost in the South, it is but fair that a similar showing should be made of the elements in the highest cost of production by a Southern plant. The highest cost given is \$12.913 per ton for the furnace designated as No. 22. This is a much smaller stack, measuring 61 feet in height by 121, feet bosh, and having an average daily output of about 38 gross tons. This furnace ran on a lean brown hema-tite—about 42,500 per cent, metalic iron— mined within a mile of the furnace. Coke was used exclusively, paving a freight charge of 85 cents per ton for a haul of 120 miles. The elements in the this iron may be stated thus:

Ore, 2.379 tons, at \$1.772 per ton. Limestorz, 1.290 tons, at \$0.745 per ton Coke, 1.421 tons, at \$3.797 per ton. .961 Total cost of all materials

dements of advantage or disadvantage in their general character and the advantathe cost in each case. In the elements of ges that lie upon the side of the iron cost that go to make up the tota's given makers in the Southern States. But the above, materials figure in each case as cort.ast between the conditions of the shown by the following table:

North and South will not be complete without an analysis of the figures of a representative Northern coke furnace. Let us take No. 11 of the Northern group, whose total of \$12,424 is the lowest cost in that division. This furnace is only 63. feet high by 14 feet bosh, but it is a good producer, as is shown by its output of 32,660 tons in a run of 357 days, between June 1, 1888, and May 31, 1889, and average of 91 tons per day. The ores used were specular, magnetic and hematite of about 61 per cent, metallic iron, evidently from the Lake Superior region, as freight is figured at \$3 per ton for transportation by rail and a lake distance of 1,000 miles. Limstone was quarried 20 miles distant, and paid 40 cents freight, while the coke came 125 miles and paid \$1.35 per ton. The elements of cost in this iron may be summarised as follows:

5,745 (63 6.85 3.854 18.452) (1cc. 1.237 tons, at \$4.645 per ton. \$5,745 (1.237 tons, at \$4.645 per ton. \$5,745 (1.237 tons, at \$4.645 per ton. \$5,745 (1.237 tons, at \$4.645 per ton. \$1.237 tons, at \$4.237 tons, at \$4.645 per ton. \$1.237 tons, at \$4.237 tons, at \$4.237

Total cost of all materials. \$10.372 Supplies and repairs Taxes, p. . . . Total of costs per ton.....

The remoteness of the source of ore is a conspicuous feature of the showing made by this furnace. To be sure, the ore is rich and is therefore able to stand a long transportation, but is nevertheless more expensive than the leaner ores of the South upon which there is short transportation. The Northern furnace enjoys the advantage of cheaper coke, although paying higher freights by more than 50 per cent. Here lies one of the greatest obstacles with which Pennsylvania iron makers have to contend, namely, high rail freights. It is not necessary to look beyond the tables given above for conclu-sive evidence of this. Here is a Southern furnace that pays 85 cents per ton for a 120-mile haul on its coke, while the Northern (presumably Pennsylvania) fur-nace pays \$1.35 for a haul of 125 miles.

ere are numberless other deductions that can be drawn from the great mass of figures which Mr. Wright has presented